

Technical data sheet

SIMPSON
Strong-Tie

AH

Anchors for frame uprights

AH anchor and its US40/50/10G washer (sold separately) are recommended for reinforcing the corners of wood-frame walls subjected to uplift forces. This connector ensures a significant absorption of tensile load. Moreover, its low width allows it to be fastened to a 45 mm wide upright.

Features

Material

- **AH29050/2-FR**: galvanized steel S250GD + Z275 according to NF EN 10346.
- **US40/50/10G washer**: steel S235JR + hot-dip galvanized finish.

Benefits

- Low-width anchor for use in frame uprights 45 mm wide.
- Anchors the wood-frame wall solidly into the ground (recommended in seismic zones).
- Reinforces the upright-lower plate connection by preventing the uplift of the upright.

Thus, energy is dissipated in the panel through the stitching.

Applications

Suitable On

- Wood, concrete

When to Use

- Used in wood-wood and wood-concrete assemblies

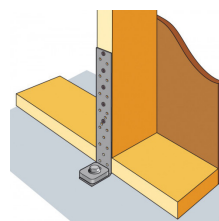


Fig. 1: Installation med 1 plade i bunden, 45 mm

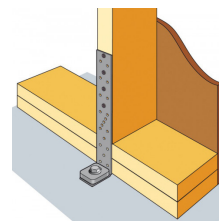


Fig. 2: Installation med 2 plader i bunden, 45 mm

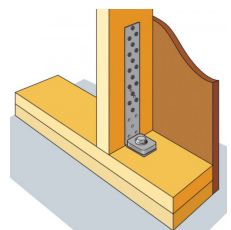
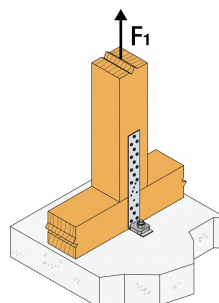


Fig. 3: Installation af indvendig væg



AH 2 lisses basses 45mm

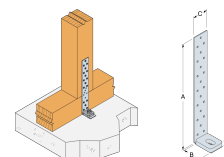


FCC + AH - Liaison des montants et des murs d'ossature sur dalle béton

AH Anchors for frame uprights

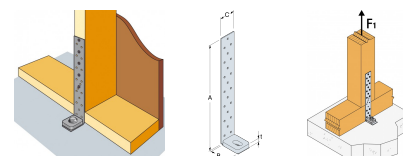
Technical Data

Dimensions and drill holes



References	Tun / DB nr.	NOB nr.	Product Dimensions [mm]				Joist				Holes flange B		
			A	B	C	t	Ø5	Ø9	Ø13	13.5x25	Ø5	Ø9	Ø13
AH29050/2-FR	-	-	292	52	40	2	23	-	-	-	-	-	1
AH39050/2-FR	-	-	390	52	40	2	27	-	-	-	-	-	1
AH49050/2-FR	-	-	492	52	40	2	36	-	-	-	-	-	1
AH9035	8977746	21594544	90	35	40	2.5	6	1	-	-	4	1	-
AH9055	1805974	-	90	55	40	2.5	6	1	-	-	6	1	-
AH16050	7742190	21594510	160	50	40	3	10	-	3	-	4	-	1
AH19050/2	5385138	43582726	192	52	40	2	16	-	-	-	-	-	1
AH29050/2	5385183	42163584	292	52	40	2	23	-	-	-	-	-	1
AH39050/2	TUN931	42290394	390	52	40	2	27	-	-	-	-	-	1
AH49050/2	TUN930	42290844	492	52	40	2	36	-	-	-	-	-	1
AH61050/2	TUN928	42290863	612	52	40	2	45	-	-	-	-	-	1
AH19050/4	1432682	42290356	194	54	40	4	12	-	-	-	-	-	1
AH29050/4	TUN932	42290375	294	54	40	4	18	-	-	-	-	-	1
AH39050/4	1432683	42290413	394	54	40	4	27	-	-	-	-	-	1
AH49050/4	TUN929	42290852	494	54	40	4	36	-	-	-	-	-	1
AH61050/4	TUN927	42290878	614	54	40	4	45	-	-	-	-	-	1
AH29050/4-FR	-	-	294	54	40	4	23	-	-	-	-	-	1
AH39050/4-FR	-	-	394	54	40	4	27	-	-	-	-	-	1
AH49050/4-FR	-	-	494	54	40	4	36	-	-	-	-	-	1

AH Anchors for frame uprights



Characteristic values - Configuration 1

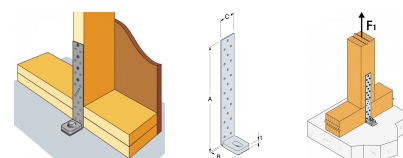
References	Number of Fasteners				Characteristic capacities - Timber C24 [kN]		Characteristic capacities - WA anchor capacity included - Timber C24 [kN]
	Joist		Flange B		R _{1,k} ⁽¹⁾		R _{1,k} ⁽³⁾
	Qty	Type	Qty	Type	CNA4.0x35	CNA4.0x50	CNA4.0x35
AH29050/2-FR	5	CNA	1	Ø 12	8.3	11.1	8.3
AH39050/2-FR	7	CNA	1	Ø 12	11.6	13.8	8.4
AH49050/2-FR	9	CNA	1	Ø 12	13.8	13.8	8.4
AH29050/4-FR	5	CNA	1	Ø 12	8.3	11.1	8.3
AH39050/4-FR	7	CNA	1	Ø 12	11.6	15.5	8.4
AH49050/4-FR	9	CNA	1	Ø 12	14.9	18	8.4

For configuration 1, 1 WA M12-119/20 or AT-HP + LMAS12/150 are suggested.

⁽¹⁾The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) – $k_{mod} = 1.1$. The bolt capacity shall fulfil $(2.33 \times F_d / N_{r,d})^{1.5} + (0.79 \times F_d / V_{r,d})^{1.5} < 1$

⁽³⁾The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) – $k_{mod} = 1.1$. The capacity of WA anchor is included with the following hypothesis of an isolated single anchor in non-cracked concrete C20/25 with normal reinforcement: edge distances are over $c_{Cr,N} = 110$ mm, $c_{Cr,sp} = 215$ mm and spacing is over $s_{Cr,N} = 220$ mm, $s_{Cr,sp} = 430$ mm

For other load duration and service class, please refer to the ETA to get more accurate capacities



Characteristic values - Configuration 2

References	Number of Fasteners				Characteristic capacities - Timber C24 [kN]		Characteristic capacities - WA anchor capacity included - Timber C24 [kN]	
	Joist		Flange B		R _{1,k} ⁽¹⁾		R _{1,k} ⁽³⁾	
	Qty	Type	Qty	Type	CNA4.0x35	CNA4.0x50	CNA4.0x35	
AH29050/2-FR	4	CNA	1	Ø 12	6.6	8.9	6.6	
AH39050/2-FR	6	CNA	1	Ø 12	10	13.3	8.4	
AH49050/2-FR	8	CNA	1	Ø 12	13.3	13.8	8.4	
AH29050/4-FR	4	CNA	1	Ø 12	6.6	8.9	6.6	
AH39050/4-FR	6	CNA	1	Ø 12	10	13.3	8.4	
AH49050/4-FR	8	CNA	1	Ø 12	13.3	17.8	8.4	

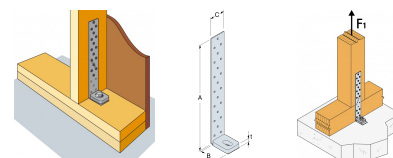
For configuration 2, 1 WA M12-119/20 or AT-HP + LMAS12/150 are suggested.

⁽¹⁾The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) – $k_{mod} = 1.1$. The bolt capacity shall fulfil $(2.33 \times F_d / N_{r,d})^{1.5} + (0.79 \times F_d / V_{r,d})^{1.5} < 1$

⁽³⁾The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) – $k_{mod} = 1.1$. The capacity of WA anchor is included with the following hypothesis of an isolated single anchor in non-cracked concrete C20/25 with normal reinforcement: edge distances are over $c_{Cr,N} = 110$ mm, $c_{Cr,sp} = 215$ mm and spacing is over $s_{Cr,N} = 220$ mm, $s_{Cr,sp} = 430$ mm.

For other load duration and service class, please refer to the ETA to get more accurate capacities

AH Anchors for frame uprights



Characteristic values - Configuration 3

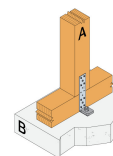
References	Number of Fasteners				Characteristic capacities - Timber C24 [kN]		Characteristic capacities - WA anchor capacity included - Timber C24 [kN]
	Joist		Flange B		$R_{1,k}^{(2)}$		$R_{1,k}^{(3)}$
	Qty	Type	Qty	Type	CNA4.0x35	CNA4.0x50	CNA4.0x35
AH29050/2-FR	16	CNA	1	Ø 12	11.4	11.4	11
AH39050/2-FR	16	CNA	1	Ø 12	11.4	11.4	11
AH49050/2-FR	16	CNA	1	Ø 12	11.4	11.4	11
AH29050/4-FR	16	CNA	1	Ø 12	17.3	17.3	11
AH39050/4-FR	16	CNA	1	Ø 12	17.3	17.3	11
AH49050/4-FR	16	CNA	1	Ø 12	17.3	17.3	11

The values published below imply the applications of a $k_{mod}=0.9$ (short-term action).

For other k_{mod} values, please refer to ETA-07/0285.

* It is possible to use CNA nails 4.0 X 50 mm in Configuration 3 only if the upright is more than 50 mm thick.

AH Anchors for frame uprights



Product characteristic capacities

References	Number of Fasteners				Characteristic capacities - Timber C24 [kN]
	Joist		Flange B		
	Qty	Type	Qty	Type	
AH29050/2-FR	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH39050/2-FR	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH49050/2-FR	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH9035	5	CNA	1	M8	4.0 / k_{mod}
AH9055	5	CNA	1	M8	4.0 / k_{mod}
AH16050	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.3/k_{mod})$
AH19050/2	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH29050/2	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH39050/2	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH49050/2	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH61050/2	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 15.2/k_{mod})$
AH19050/4	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$
AH29050/4	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$
AH39050/4	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$
AH49050/4	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$
AH61050/4	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$
AH29050/4-FR	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$
AH39050/4-FR	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$
AH49050/4-FR	$n \geq 2$	CNA	1	M12	$\min (n \times R_{lat,k} ; 19.8/k_{mod})$

$R_{lat,k}$ = Characteristic load-carrying capacity per shear plane per fastener (CNA or CSA)

$n = n_{ef}$ = effective number of fasteners acc. to Eurocode 5 (8.3.1.1)

Required calculated pull-carrying capacity for bolt: $N_{R,d} = F_{1,d} \times 2,33$; the required calculated shear capacity for bolt $V_{R,d} = F_{1,d} \times 0,79$

AH9035 is only usable for connection to rigid support.

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Installation

Fixing

On concrete:

Configuration 1 or 2:

- *Mechanical anchor:* WA M12-104/5 dia. 12
- *Chemical anchor:* AT-HP resin + LMAS M12-150/35 rod.

Configuration 3:

- *Mechanical anchor:* WA M12-219/120
- *Chemical anchor:* AT-HP resin + LMAS M12-150/35 threaded rod per metre and tfix minimum 110 mm.

On wood:

- CNA annular ring-shank nails dia. 4.0 x 35 or dia. 4.0 x 50 mm (the number of nails to be used depends on the application configuration).

Installation

- Use only the fasteners specified for each of the configurations while precisely respecting the edge distances.
- The US40/50/10G washer must be used to guarantee the forces given in the table below.

This prevents the AH anchor from unfolding during uplift. The washer is sold separately.

RECOMMENDATIONS FOR USE:

It is recommended to use the AH anchor + US 40/50/100 washer at the end of each wood frame, at the backing of the uprights and perpendicular to each opening. This recommendation does not replace a verification carried out by a competent engineering firm.

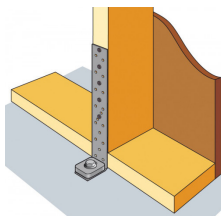


Fig. 1: Installation med 1 plade i bunden, 45 mm

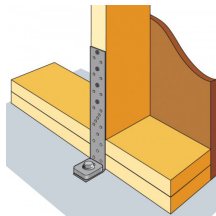


Fig. 2: Installation med 2 plader i bunden, 45 mm

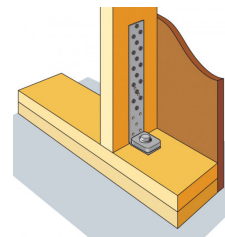
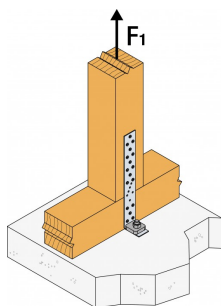


Fig. 3: Installation af indvendig væg



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